Fusion order information

Single Radio Band

Description			Band	Provider	Model PN
Fusion LTE Router	Fixed/Portable	GPS	Band 13	Verizon	140-9320-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 13	Verizon	140-9320-100
Fusion LTE Router	Fixed/Portable	GPS	Band 17	AT&T	140-9340-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 17	AT&T	140-9340-100
Fusion LTE Router	Fixed/Portable	GPS	Band 17	VTEL	190-9340-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 17	VTEL	190-9340-100
Fusion LTE Router	Fixed/Portable	GPS	Band 12	GDB	190-930G-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 12	GDB	190-930G-100

Dual Radio Band

Description			Bands	Model PN
Fusion LTE Router	Fixed/Portable	GPS	Band 13 and Band 17	140-9324-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 13 and Band 17	140-9324-100
Fusion LTE Router	Fixed/Portable	GPS	Band 12 and Band 13	190-932G-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 12 and Band 13	190-932G-100
Fusion LTE Router	Fixed/Portable	GPS	Band 12 and Band 17	190-934G-000
Fusion LTE Router	Wi-Fi (3 × 3)	GPS	Band 12 and Band 17	190-934G-100

Accessory Kits

Description	Comments	Part Number
Fusion Accessory Kit, Vehicle Mount Version	Vehicle mount	150-5500-013
Fusion Accessory Kit, Fixed Version	Fixed	150-5500-014
Fusion Accessory Kit, Mobile Version	Mobile	150-5500-015

Accessories

Description	Comments	Part Number
USB to RS-232 Converter cable		150-9300-010
Mobile Mount Multiband Antenna (LTE Wi-Fi, GPS), Black, PCTEL		401-5099-205
Antenna, LTE LProfile HGain (Band 13/Band 17), Mag mount with ground plane disc, SMA, 15 ft., 3G fallback	Standard Antenna	401-9300-001
Antenna, GPS, Mag Mount, SMA		401-7100-003
Antenna, Wi-Fi, 9 in., Mag Mount, RP-SMA		401-7100-004
Category 5 100Base 7 ft. (2 m) Red Ethernet Cable		L2CAB0002
DIN Rail Mount — kit includes DIN mounting plate assembly (with retainer spring and screw), four #6-32 × ¼-inch length cap screws and four #6 lock washers for fastening to top of Fusion router.		250-5800-410

Minimum Requirements

Interface and configuration of this cellular device requires a user PC with an Ethernet interface, Microsoft Windows 98 or newer, and a web browser.

Technical Support

For assistance with this product, contact CalAmp technical support.

Email wngsupport@calamp.com
Phone 805-987-9000

Or visit the Support section of our website at http://www.calamp.com/support.

Any changes or modifications not expressly approved by the party responsible for compliance (in the country where used) could void the user's authority to operate the equipment.

CalAmp reserves the right to update its products, software, or documentation without obligation to notify any individual or entity. Product updates may result in differences between the information provided and the product shipped. For access to the most current product documentation and application notes, visit www.calamp.com.

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ABOUT CALAMP

CalAmp is a leading provider of wireless communications products that enable anytime/anywhere access to critical information, data and entertainment content. With comprehensive capabilities ranging from product design and development through volume production, CalAmp delivers cost-effective high quality solutions to a broad array of customers and end markets. CalAmp is the leading supplier of Direct Broadcast Satellite (DBS) outdoor customer premise equipment to the U.S. satellite television market. The Company also provides wireless data communication solutions for the telemetry and asset tracking markets, private wireless networks, Interoperable Train Control (ITC) radio transceivers for use in railroad Positive Train Control (PTC) applications, public safety communications and critical infrastructure and process control applications. For additional information, please visit the Company's website at www.calamp.com.

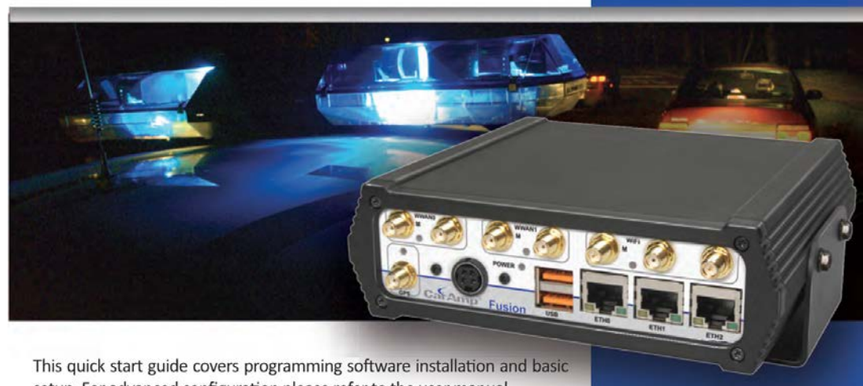
REVISION HISTORY

REV	DATE	REVISION DETAILS
0	July 2012	Initial release as PN 004-0001-600 for Fusion Multi-Network LTE Router.
1	February 2013	Updated to list optional accessories and kits and additional improvements.
A	October 2013	Updated for Firmware v1.2.0 (automatic setting is selected & gray), PN 817-9300-901 and Phone Numbers.

Quick Start Guide

Fusion™

HIGH-PERFORMANCE MULTI-BAND LTE ROUTER



This quick start guide covers programming software installation and basic setup. For advanced configuration please refer to the user manual.

Quick Start Guide

Fusion™

HIGH-PERFORMANCE MULTI-BAND LTE ROUTER

© 2012-2013 CalAmp

PN 004-0001-600 Rev. A
Revised October 2013

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PN 004-0001-600 Rev. A

All specifications are typical and subject to change without notice.

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Package Contents

The Fusion Router package contains the following items.

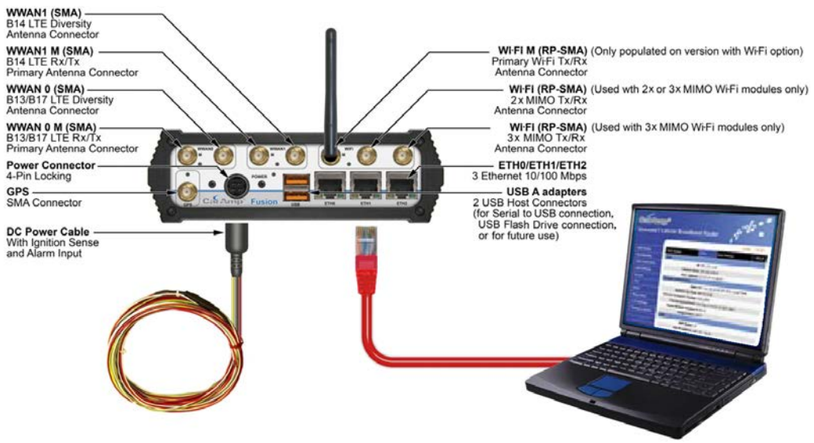
(1) Fusion Router (See Fusion order information for model part number.)
(1) Power Cable, DC, 22 ft., Fused (PN 897-9300-001), includes fuse
(1) Mounting Bracket (PN 817-9300-901) *or* Plate (PN 817-9300-902), depending on whether model is Fixed or Mobile, with attaching hardware
(1) Quick-Start Guide (PN 004-0001-600)
(1) Information Card (PN 004-7500-000)

Important: Before you begin, you will need an LTE account with the carrier(s) of your choice and an active SIM or UICC card.

Device Connections

Step 1 Unscrew two screws to remove the cover plate covering the WWAN slots and insert the SIM or UICC card(s) into the WWAN slot(s) as shown. Insert the first card into the WWAN0 slot. If you are using a dual card solution, install the second card into the WWAN1 slot. (Retain the cover plate and attaching screws to reattach the cover plate after setup is complete.)

Step 2 Connect the cellular antennas to the appropriate SMA connectors on the front of the Fusion as shown in the following figure, matching the antennas for the WWAN0 module with WWAN0 connectors and antennas for the WWAN1 module with WWAN1 connectors. For each antenna pair, connect the main Rx/Tx antenna to the connector labeled M, and MIMO/Diversity to the secondary (unmarked) connector of the pair.



Note: Verify both cellular antennas for each module are for the correct frequency range for the module. Standard 3G antennas may not work for LTE, and vice versa. Follow your antenna manufacturer's recommendations for proper antenna ground-plane practices.

Step 3 Connect a GPS antenna to the SMA connector labeled GPS and connect Wi-Fi antennas to the RP-SMA connectors: one for the Main (WiFi M) and one or more (as equipped) for Wi-Fi MIMO/Diversity (unlabeled).

Step 4 Connect the Ethernet cable to **ETH1** of the Fusion (center Ethernet connector) and connect the other end into the Ethernet port of your PC.

Step 5 Connect the DC power cable to the modem Power port and connect to an acceptable DC power source (10 - 30 VDC). The Fusion is shipped with a DC power cable to connect the unit to DC power. The power cable includes a fuse holder. Insert the fuse in the power cable fuse holder before powering the unit. Cable connections are listed in the DC Power Cable Pin-out table that follows.

DC Power Cable Pin-out

Pin	Wire Color	Description	Notes
1	Red	V_{IN}	DC input power lead, 13.8 V nominal (10 V to 30 V range).
2	Black	Ground	Connect to power supply Ground.
3	White	Ignition Sense	Standard ignition-on signal. Maximum voltage above which ignition_sense will be asserted = 9.0 V. **If IGN Sense is not used, this line must be connected to V_{IN}.**
4	Yellow	External Alarm Input	External alarm input (active low); can be left floating if not used.

After power is applied, the Fusion Power LED will light solid red for 1 second, then turn solid amber for 5-6 seconds, blink amber for 6 seconds, and then turn solid green. If assistance is required, refer to the Fusion User Manual (PN 001-0000-602) or contact technical support.

Accessing the Modem's Web Server

The Fusion is configured via a Web-browser interface and contains a DHCP server which will automatically assign an IP address to your PC, however in some cases it may be necessary to change the network settings on the PC to accept the IP address assigned by the Fusion.

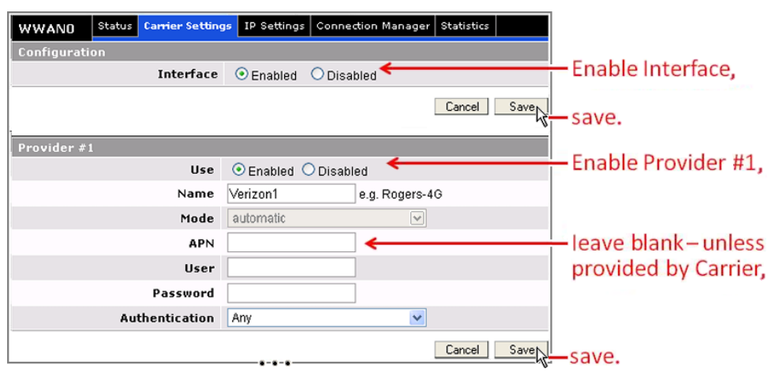
Step 1 Enable a network connection with the following LAN settings. In the Internet Protocol (TCP/IP) Properties window, select **Obtain an IP address automatically** and **Obtain DNS server address automatically**. Click **OK** and close.

Step 2 Open a Web browser and enter **192.168.1.50** in the Address bar. When the connection Login window appears, enter the User name: **admin** and the Password: **password** and click **OK**.

Note: The Ethernet cable between the Fusion and PC must be connected to **ETH1** (center Ethernet connector) for this IP address to work.

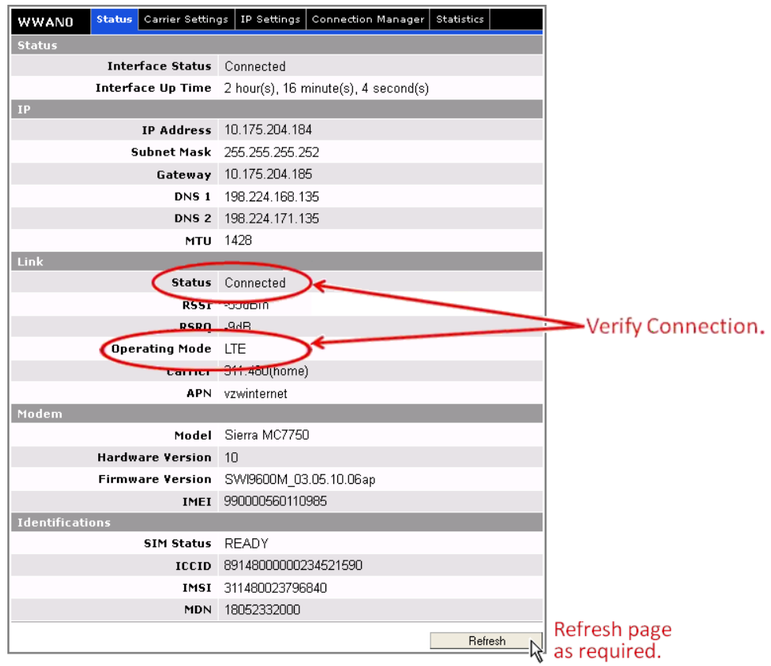
LTE Connection

From the left side of the Home page, select **WWAN0** from the main navigation menu and select the **Carrier Settings** tab. In the Configuration section, mark the Interface as **Enabled** and click **Save**. Enable your Provider(s) below, entering a **Name** for each and selecting the **Mode**, clicking **Save** to save your settings.



Leave **APN**, **User**, and **Password** blank unless you have received specific values from your carrier. For most cases, **Authentication** should be left as **Any**.

It may take several minutes to establish the connection after it has been enabled for the first time. Verify the connection is active by clicking on the Status tab.



If the Fusion is equipped with an optional second LTE module, select **WWAN1** from the main navigation menu, select the **Carrier Settings** tab, and repeat the procedure for Provider(s) on the second LTE module.

Status LED Activity

After the modem has been successfully provisioned, the SIM or UICC card has been accepted, and an LTE data connection enabled, the Power LED and Status LED illuminate solid green when the unit is running normally. The status light for each active WWAN will flash amber while connecting and then blink green while connected, indicating Rx/Tx activity.

For more information about the Status LEDs and what they indicate, refer to the Fusion User Manual (PN 001-0000-602).